

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): A stable area detection device for a platen gap formed between a head and an upper surface of a platen, in a platen gap adjustment device, the platen gap adjustment device ~~including~~comprising:

- a carriage guide shaft,
- a guide shaft gear fixed to an end of the carriage guide shaft,
- a gap adjuster cam rotatable integrally with the guide shaft gear and formed in a shape to change the platen gap in a plurality of platen gap stages,
- a cam follower for the gap adjuster cam, and
- a drive motor for driving the guide shaft gear to rotate,

wherein the carriage guide shaft is moved relatively to the platen so that the platen gap is adjusted by driving the drive motor to rotate the gap adjuster cam,

the gap adjuster cam is configured so as to provide a plurality of stable areas corresponding to the platen gap stages where the platen gap is constant while a rotational phase of the gap adjuster cam varies in a predetermined range and

a plurality transition areas where the platen gap changes between the stable areas as the rotational phase of the gap adjuster cam varies;

wherein a stable area detection sensor is provided so as to face to a rotational member which rotates synchronously with the gap adjuster cam, and

a detection object ~~in correspondence~~which corresponds to ~~with~~ the stable areas of the platen gap is provided on the rotational member and is detected by the sensor.

2. (original): The stable area detection device for the platen gap according to Claim 1, wherein the stable area detection sensor includes a light emitting portion and a light receiving portion and

the detection object comprises a light shielding plate which passes between the light emitting portion and the light receiving portion.

3. (original): The stable area detection device for the platen gap according to Claim 1, wherein the detection object detected by the detection sensor for the stable areas is formed in correspondence with a central portion in each stable area, other than adjacent portions to the transition areas formed in both ends of said stable area.

4. (currently amended): The stable area detection device for the platen gap according to Claim 1, wherein a home position detection sensor is provided so as to face to the rotational member, and the rotational member is provided with ~~another~~ another detection object for the home position detection sensor at a position where the gap adjuster cam is located in a home position.

5. (original): The stable area detection device for the platen gap according to Claim 4, wherein the position where the gap adjuster cam is located in the home position is a boundary portion between the stable area of a maximum platen gap stage and the transition area adjacent to the stable area of the maximum platen gap stage.

6. (original): The stable area detection device for the platen gap according to Claim 1, wherein the gap adjuster cam includes a restricting mechanism for restricting a rotation thereof so as to be rotatable in a range from the stable area of a minimum platen gap stage to the stable area of the maximum platen gap stage.

7. (original): A recording apparatus which performs a recording on a recording medium, the recording apparatus comprising the stable area detection device of the platen gap according to Claim 1.

8. (original): An liquid ejection apparatus which ejects a liquid on a liquid ejection medium, the liquid ejection apparatus comprising the stable area detection device of the platen gap according to Claim 1.

9. (new): A platen gap sensing device comprising:
a gap adjuster cam rotatable for changing a platen gap in a plurality of platen gap stages;
a rotational member rotatable synchronously with the gap adjuster cam;
a detection object formed on the rotational member; and
a sensor facing to the rotational member so as to conduct a detection of the detection object,
wherein the platen gap is determined based on a result of the detection by the sensor.

10. (new): The platen gap sensor according to claim 9, wherein the detection object is a light shielding plate member formed on a circumferential portion of the rotational member.

11. (new): The platen gap sensor according to claim 10, wherein a plurality of the light shielding members are formed on the circumferential portion of the rotational member.

12. (new): The platen gap sensor according to claim 10, wherein the sensor is provided with a light emitting portion and a light receiving portion, and the detection is conducted by whether or not the light emitted from the light emitting portion is received by the light receiving portion.